

CLAIMS

What is claimed is:

1. A method for removing red-eye effect in a digital image, comprising:
 - 2 detecting automatically at least one candidate red-eye region within the digital image;
 - 4 presenting the at least one candidate red-eye region to a user; and
 - 6 producing a modified digital image by performing red-eye removal in each candidate red-eye region that the user accepts, each candidate red-eye region that the user rejects remaining unmodified.
2. The method of claim 1, further comprising:
 - 2 saving the modified digital image.
3. The method of claim 1, wherein a plurality of candidate red-eye regions are
 - 2 detected within the digital image.
4. The method of claim 3, wherein the plurality of candidate red-eye regions are
 - 2 presented to the user one at a time.
5. The method of claim 3, wherein the plurality of candidate red-eye regions are
 - 2 presented to the user simultaneously.
6. The method of claim 5, wherein a first pair of opposing directional controls is
 - 2 used to select a particular candidate red-eye region and a second pair of opposing

4 directional controls is used to perform one of acceptance and rejection of the
particular candidate red-eye region.

7. The method of claim 6, wherein the first pair of opposing directional controls
2 comprises horizontal directional controls and the second pair of opposing
directional controls comprises vertical directional controls.
8. The method of claim 1, wherein an indication is provided that a selected candidate
2 red-eye region is the Mth candidate red-eye region of N total candidate red-eye
regions in the plurality.
9. The method of claim 1, wherein presenting the at least one candidate red-eye
2 region to a user comprises marking the at least one candidate red-eye region.
10. The method of claim 9, wherein marking the at least one candidate red-eye region
2 comprises enclosing the at least one candidate red-eye region within a geometrical
figure.
11. The method of claim 9, wherein at least one icon accompanying a selected
2 candidate red-eye region indicates how the user is to accept the selected candidate
red-eye region.
12. The method of claim 9, wherein at least one icon accompanying a selected
2 candidate red-eye region indicates how the user is to reject the selected candidate
red-eye region.

13. The method of claim 1, wherein an indication is provided of whether the at least

2 one candidate red-eye region has been accepted by the user.

14. The method of claim 1, wherein presenting the at least one candidate red-eye

2 region to a user includes zooming in to show an enlarged view of a selected
candidate red-eye region.

15. The method of claim 14, wherein the enlarged selected candidate red-eye region is

2 automatically centered on a display.

16. The method of claim 1, wherein all candidate red-eye regions are accepted

2 simultaneously.

17. An apparatus, comprising:

2 a memory to store a digital image;

4 red-eye detection logic to detect automatically at least one candidate

red-eye region in the digital image;

6 a display on which to present the at least one candidate red-eye region

to a user;

8 a user interface by which the user indicates whether to accept the at

least one candidate red-eye region; and

10 red-eye removal logic to produce a modified digital image by

performing red-eye removal in each candidate red-eye region that the user

accepts, each candidate red-eye region that the user rejects remaining
12 unmodified.

18. The apparatus of claim 17, further comprising:

2 an imaging module to convert an optical image to the digital image;

19. The apparatus of claim 17, wherein the user interface comprises a first pair of
2 opposing directional controls to select a particular candidate red-eye region and a
second pair of opposing directional controls to perform one of acceptance and
4 rejection of the particular candidate red-eye region.

20. The apparatus of claim 19, wherein the first pair of opposing directional controls
2 comprises horizontal directional controls and the second pair of opposing
directional controls comprises vertical directional controls.

21. The apparatus of claim 17, wherein the user interface is configured to zoom in to
2 show an enlarged view of a selected candidate red-eye region.

22. The apparatus of claim 21, wherein the user interface is further configured to
center the enlarged selected candidate red-eye region on the display.

23. The apparatus of claim 17, wherein the apparatus is one of a digital camera, a
2 digital camcorder, a personal computer, a workstation, a notebook computer, a
laptop computer, and a personal digital assistant.

24. An apparatus, comprising:

2 means for storing a digital image;

 means for automatically detecting at least one candidate red-eye region
4 in the digital image;

 means for presenting the at least one candidate red-eye region to a
6 user;

 means for the user to indicate whether to accept the at least one
8 candidate red-eye region; and

 means for producing a modified digital image by performing red-eye
10 removal in each candidate red-eye region that the user accepts, each candidate
 red-eye region that the user rejects remaining unmodified.

25. The apparatus of claim 24, further comprising:

2 means for converting an optical image to the digital image;